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STREET-RAILWAY RATES, WITH ESPECIAL REFERENCE TO DIFFERENTIATION

SUMMARY

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THE purpose of this article is to develop the economic principle at the foundation of reasonable street-railway rates, and also to indicate certain of its applications. It is the writer's opinion that the rate-making problem is fundamentally the same for street railways and for steam roads. In each case we must recognize the presence of differential charges and provide for their equitable distribution. That the principle of differentiation is modified, and superficially quite changed, in its application by street railways, is true. But this may be due chiefly to the decidedly retail and therefore customary character of street-railway fares.

To speak of differentiation in street-railway rates in the United States, bringing over the idea from steam roads, appears to be like passing from the subject of mosquitoes in New Jersey to that of snakes in Ireland. Hence the need of considering what is meant by differentiation in current railroad practice.

I. The Principle of Differentiation

The readers of this journal may be assumed to be acquainted with the theory of railroad rates. Hence we shall merely review, without explanation, the points that are of general, but not of peculiar, significance for street-railway practice. These general propositions are, of course, stated in a way to lead up to the more specific matter to follow.

The growth of fixed capital and its specialization brings into existence heavy "fixed charges" which cannot be definitely apportioned as costs to the particular goods to whose production the capital has contributed. Railroads, both steam and street, show a greater ratio of capital to labor employed than any other considerable branch of industrial enterprise; hence it is here that the unapportioned part of cost is greatest. Continuous utilization of full productive capacity is the way to reduce fixed charges per unit of product, and thus to reduce this portion of the cost of goods. For this reason it is expedient to make a special concession in price wherever considerable new and additional business (other than peak-load business) can be obtained by a railroad.

The expediency of lowering rates does not apply to all classes of goods or services, nor is it conditioned by resemblances or differences among the goods dealt with; only those that respond to a concession with a much increased demand can economically be favored. Articles that are relatively cheap in proportion to bulk or weight will be scarcely carried at all unless favored as regards fixed charges. Articles capable of bearing a higher rate (not sensitive to reductions or advances) do not lose, but gain, if the favored articles that would not otherwise be carried make any contribution at all towards meeting fixed charges. The classification of freight in accordance with the differential principle is the great example of the variation of rates with little regard to total unit cost.

A differential is one of a system or schedule of quantitative differences graded according to some principle not determined by the intrinsic qualities of the things differentially treated. But varying differentials that are adjusted in detail but roughly and according to convenience may produce external uniformity of price, *i. e.* a differential distribution of fixed charges may complement and equalize variations in prime cost. The lower limit beyond which the reduction of a rate by differentiation cannot economically go is the separable cost, or prime cost, of the particular good or service. For steam roads this as a rule is considerably less than a proportionate share of operating expenses; *i e.* some of these, as well as most capital charges, do not vary with the volume of business. Prime cost varies with conditions and circumstances, while reliability and stability in rates are necessary in order that business may adapt itself to them, hence only average adjustments of rates to prime cost are practicable.

A lateral limitation upon differentiation is constituted by the moral feelings of the public, which insists that the same price be charged for the same commodity under the same conditions, *i. e.* without distinction of persons. This is another reason for simplicity and stability of rates.

There is less differentiation in rates for passenger service than for freight, largely for the reason just given.

Total cost per unit of business cannot be the rule for price or rate-making. Total unit cost is itself reduced by additional business, hence the rate should be determined with reference to this possible variation.

Economy — the performance of the greatest service at least cost — is at the foundation of the differential system, tho monopoly has facilitated its development and application.

So much for the principles determining railway rates in general. A corollary relating to certain peculiarities of the economic situation of branch steam railroads or extensions requires somewhat fuller statement because of its direct application to a fundamental point of street-railway rate policy.

Branch lines are often acquired and carried year after year by important railroad systems without regard to the fact that the books of the former show a continual deficit. Traffic is likely to be sparse on such an out-of-the-way line. Even with rather high rates, it is often unable to pay fixed charges. None the less it is probable that the main line can well afford to continue to pay the deficit.

It may be assumed that the branch line discharges and receives its freight from the controlling road. That is likely to be what it is controlled for. If the main line is 1000 miles long, and the branch line 50, then we may assume that the net receipts above movement cost for the branch line are not much more than one-twentieth the net receipts above movement cost for the main line from the same freight. But the main line will have a much greater density of traffic, hence the freight from the branch need be required to pay, when it gets on the main line, perhaps only one-tenth of the fixed charges per ton-mile which it must pay on the branch line in order to meet "total" cost. The main line will also obtain a much longer haul. It may, therefore, gain enough to be able to pay the deficit of the branch line and still have a large profit from the business contributed by the latter. The main line receives a sufficient consideration in the opportunity to make profits from the business after it gets to that portion of the system. If necessary, the long-haul traffic that would not be otherwise obtained may reasonably be required to pay less than its pro-rated share of fixed charges. This method of dealing with branch business amounts merely to carrying it part of the way for less than an *average* unit-cost, the basis of the average being rather arbitrarily determined. But deviation from type is the essence of differentiation. The financial carrying of an apparently unprofitable branch may thus be quite economical, if due attention is paid to the differential nature of charges and profits.

The practice and precedent of steam railroads are altogether in favor of differential rates, the differentiation having no direct relation to "total" cost, and depending on a difference in the kind of traffic only so far as that difference may be connected with difference in ability to pay and also because external differences in traffic are naturally a great facility in classification. This differentiation of rates has been a development due entirely to the initiative of the railroads themselves. And the extent to which the development has been carried in the United States, tho not without its inconvenience and embarrassments to the public, is one of the most important respects in which American railroads show their greater progressiveness over those of other countries where the development of commerce has been hampered by a failure to carry the application of the principle so far.

II. CHARACTER OF THE STREET-RAILWAY FLAT RATE

In passing from steam-railroad to street-railway enterprises, the principle of the differential rate certainly is modified. The conditions here, as regards great importance of fixed charges and of expenses that do not vary with the business done, are altogether favorable to some manifestation of the differential principle. But most would say that the prevailing flat-rate "principle" is quite in contrast with the differential practice of "charging what the traffic will bear," and that therefore the basis of street-railway rate making must be quite different from that of steam-railroad rate making.

In one respect it is obvious that the flat rate is quite on all fours with the principle of charging what the traffic will bear. There is absolutely no attempt to make the charge conform in detail to the character of each particular service or class of service. The charge for an individual service is not based upon a calculation of its individual cost, and there is no direct relation between the two. If there were no other resemblance between the developments in the two situations, this fact of itself would indicate that their economic foundations are the same. But let us see why it is that in this country the nickel street-railway fare is seldom substantially departed from, regardless of the character of the service rendered.

In the United States the nickel is pretty nearly the bottom price for any service for which it is worth taking the trouble to collect for, unit by unit, in cash. It is true that newspapers sell for less, but the customary price has probably become established largely with reference to payment by the week or month, *i. e.* for combined sales. It is significant that the demand for a reduction of fares on street railways takes the form of trying to obtain more than five tickets for a quarter. Most people would not appreciate a reduction that called for a frequent making out of four cents change in cash. The passenger would rightly consider the trouble of making change a part of the cost of his trip. Copper currency is also considered by many disagreeable to handle, perhaps because of its formation of verdigris and its apparent affinity for dirt. Hence the nickel is for many purposes the natural stopping point in the downward movement of the price of a small service. The odd cents of the bargain counter are a phase of something of the nature of an advertising device or of an expense devoted to attractive packings rather than a result of true price determination. It is only for children and for the very poor that the cent is a real and important price unit. The nickel being thus a bottom price, and the bottom of a thing being naturally flat, the flat-rate principle is to a large extent an accidental result of our system of coinage. In Germany the 10-pfennig piece, worth 2.4 cents, takes a similar position as the unit of street-railway charges.

It is by no means claimed that this nickel bottom is impenetrable. The price for street-railway service may, and frequently does, drop below that, but always with a tendency to make the nickel after all the fundamental point, from which a slight departure is made almost by way of exception, as, *e. g.*, by selling more than five tickets for twenty-five cents. If the fundamental rate had not received a good deal of support from the conditions and tendencies of street-railway service it would not have held. But it has never been conclusively proved that the street railways could get along with much less. Coincident with the cheapening of operating costs resulting from the introduction of electric traction, there came combinations of previously independent roads, and transfers. Thus the passengers obtained a concession to their convenience and a presumably somewhat longer average ride in lieu of a possibly lower fare, and they were doubtless well satisfied with their bargain. The public has also been well pleased to have the street railways build extensions farther and farther into the suburbs. It may be laid down as a general proposition that the people prefer to obtain more for the nickel rather than to pay less and on the average get less.

The managers of the street railways, on the other hand, have found the nickel profitable in most cases, and they, as well as the public, have at least secretly recognized the convenience and business advantages of having the rate of fare fixed by custom at the nickel. This has given them a fixed point on which to base their calculations and has promised them great gain in the future as business increased in density, and thus in profitableness. For the margin between operating expenses per passenger and the nickel collected is, for every increase in the total number of passengers, more and more a contribution to profits as distinguished from interest. The fixed charges naturally do not keep pace with growing business. Extensions of road and the lengthening of the ride have doubtless cut into these increasing returns of street railways, and operating expenses also have increased in a way to encroach sometimes on the margin of net earnings in each nickel. But even tho the nickel has not yielded all the profits that street-railway interests have looked forward to, the public is nevertheless entitled to claim the benefits of the flat-rate principle, just as street-railway capitalists would have claimed, and doubtless obtained, what the nickel would have given them, had operating expenses gone down instead of tended upward.

A street railway is an extreme example of a kind of enterprise where a large business obtained by the concession of a low rate is essential to success. The enlightened policy is to make the greatest possible use of the great amount of fixed capital sunk in the plant, which means putting the price very little above prime cost. A management that intends to stay with a street railway is not seriously thinking of any other policy. It happens that in the United States five cents has been the most convenient *low* rate at a comfortable distance above prime cost. Hence influences tending to determine rates, operating from the side of both corporations and the travelling public, have come to an equilibrium at that price.

The maintenance of the five-cent flat rate ought so long as possible to be a fixed principle of street-railway policy. If it is to be departed from, that should be accomplished gradually and as a last resort. Every possible device should be adopted to save this rate in its fundamental application, that is, as regards the *traffic between residence and business sections.* The public has a vested right — morally, if not legally, — to the nickel fare for this service. Suburbs have been developed and homes have been built by workingmen and others on the assumption that the nickel fare from home to the business center was something which they could reckon with. If street-railway stocks will depreciate unless earnings are increased, real estate values in the suburbs, on the other hand, will go down, if the rate of fare is increased. The owners of stocks should not be protected from the effects of their miscalculations at the expense of others whose calculations were more reasonable, and whose interests are rather more bound up with the good of the community. For it is a fundamental public interest that there be cheap and rapid means of transportation to the suburbs, in order that some of the evils of congestion of population, with its attendant injury to the public health, may be avoided or cured.

External uniformity and constancy of price conform to the requirements of the situation. Street-railway service being rendered for a small price per unit, custom is a factor in determining what shall be charged. The customary price hit upon has been the nickel, because that is the coin most convenient for small retail transactions, upon which all the interests at stake have been most nearly able to agree. Retail prices in general tend to become customary. Furthermore, any service which is to be popular, in the sense of being rendered to practically all the people of a city, must not only be provided at as low a price as possible, but the rate must be well understood and well established.

The flatness and the stability of the nickel rate being thus disposed of, let us consider next the question as to how far the flat rate actually is in practice and in detail the opposite of a differential rate.

The economic essence of the differential principle is, not that prices are different for similar services, but that, for two services substantially similar and therefore "costing" about the same amount, one is made to contribute to fixed charges and profits only (say) 10% above prime cost, while the other contributes 50%. The result is that the price in the two cases is as 11 to 15, that is, there is a difference in price. But this difference is merely an incidental result of the principle involved, and by no means essential. If the one service costs 5 and the other 7½, but both are performed for a price of 10, the differential charge is there; since the net return is 100% in addition to prime cost in the one case and but 33% in the other. Here the result of the differential charge is uniformity of price. In this illustrative case the uniformity is merely an accidental result; it is not in general wrong to think of the differential principle as causing differences in prices.

In the case of street railways the uniformity of the charge is no accident. True, the scope of the operations of the differential principle is restricted. It is not free to produce the remarkable effects that it sometimes does in steam-railroad charges. But passengers are, nevertheless, in a sense, differentially treated, by very reason of the fact that the rate for all is a nickel.

Business on a given line during certain hours of the day may not be sufficient to justify the running of more than a minimum schedule of cars. There is a certain minimum frequency of street-car service — doubtless varying from city to city — which the public will require. The necessity of giving employees something like a full day's work also causes unfilled cars to be kept running at slack hours. Under such circumstances, new passengers riding on one of the cars gathering few passengers cost the company practically nothing. Here a nickel may be considered to be entirely net return. On some other line of the company the traffic is probably dense enough all day long to warrant the operation of more than a minimum schedule. Here added passengers will cause the addition of cars, and a car load of passengers must be taxed with the operating expenses of the car before we get a net portion of each nickel. In the rush-hour period the same principle applies, with a modification. Since the rush hour is the period of maximum loading, if cars are supplied in proportion to passengers at that time, the supply of equipment must increase to a point where some of it is used for rush-hour passengers only. In this case some of the interest and depreciation on equipment is prime cost. In other words, the rush-hour variable cost, or prime cost, per car load of business (assuming the car load to be a constant quantity) is greater than at any other time. If the car load remains the same, the margin above prime cost from each nickel will be much reduced. In practice the situation is met by increasing the load, so that the number of nickels per car trip is great enough to more than overbalance the increased prime cost per car load. In this way the rush-hour business is possibly the most profitable business of street-railway companies. As regards the passenger riding against the current in the rush hour, however, the prime cost of carriage is again practically nil. There is plenty of differentiation in the system of street-railway charges, tho the expression of the principle is not the same as with steam roads.

So far as practice knows an opposite, the nearest to the true opposite of the differential system of rates is the zone system, according to which the charge made is modified according to distance traversed. But even in this case, so antithetical are railroad rates to adjustment on the basis of cost, the approximation to a total-cost system is very remote.

Regard for total cost per unit should take account of the density of traffic on different lines, as well as distance travelled. But this, so far as the writer knows, has not been attempted. The flat-rate system, by being *more flat* than the zone system, only comes much nearer to being an adequate expression of the economic factors which produce the manifestly differential system of steam roads. The practice of charging the same or approximately the same rate for the long haul and for the short haul included within it is a phase of the differential system of the steam roads. There is an evident and essential similarity between this and the flat-rate system of the street railways.

Whether the term differential should be applied to the relation of the flat nickel rate to the contributions to profits made by different classes of passengers, may perhaps be questioned. That is a matter of terminology. The conception of a differential return to land as the foundation of the theory of economic rent is older than are the railroads. The differential return here is a result of uniformity of price for products of varying cost; thus the situation is entirely analogous to the differential contributions of street-railway passengers to profits. It would appear, therefore, that differentials are a part of the street-railway flat-rate system as much as of the steam-railroad system of classification of freight and passengers.

Passenger business, which is practically the whole business of street railways, does not lend itself to differentiation as readily as freight business. Even the railroads differentiate less in their passenger traffic. The well-to-do citizen will not submit to being charged a double price where the workman is charged half as much for the same service; at least he does not want it done openly and without the semblance of a difference in the quality of service. Hence this kind of differentiation will not work well. The street railways, especially, could not well separate the different classes of passengers without great cost to themselves and intolerable inconvenience to the travelling public.

Most of the business of a street railway, moreover, will respond to the nickel rate in a way to yield the maximum profits at about that point. The business that would readily pay more even for somewhat better accommodation is relatively small. The additional business that could be obtained by a slight reduction in price is also not important. These are further phases of the fact that the nickel is a low-level price for such a service, at which the various factors tend to be at equilibrium.

Where quantity of business is a considerable factor in its total unit cost, and where an enterprise ministers to several lines of production or service which are different from each other in respect of their responsiveness to a lowering of charges, there is room for the application of the differential principle. The street-railway business conforms to the requirements of this proposition, yet the flat rate, instead of external differentiation, is the rule. This no longer appears paradoxical when we see that the *nickel calls forth the greatest volume of traffic* for practically all the classes the street railways serve. The single rate for diverse services and the varying rate for substantially the same service have an identical economic foundation. There is evidently every reason why departure from the flat rate should be permitted for sufficient reasons, but we must not forget that there must also be good grounds for the fact that there is actually so little departure from it. Those grounds make it entirely consonant with the principle of differentiation.

The absence of causal relation between the total cost of the particular item of street-railway service and the price paid for it is still the essence of the situation, but the differential element in the price charged results from it, instead of in detail determining it. The flat rate can therefore be maintained only by the inclusion of business on which the margin of net return in the nickel is large along with that in which it is small, — the fat with the lean. This situation is of the essence of the flat-rate principle, that it cover both the relatively profitable and the relatively or absolutely unprofitable business, and that the one shall make up for the other and the other be balanced by the one. The Post-Office sustains itself on a flat-rate system of charges maintained in just this way.

The " fat " is composed of the short rides taken within the business center; the home-to-work traffic is the complementary "lean." Both because of the time of day when it occurs and because of its balanced character, the inner-city traffic is highly advantageous to the railway that serves it. But its amount depends upon the volume of daily traffic to and from the business center. There is a natural connection between these two. They should therefore go to the same company in order that the high differential return from the one may compensate for the high prime cost of the other. Consolidation of street railways thus not only facilitates the rational development of a transfer system but it also appropriately unites fat and lean.

We have mentioned some of the peculiarities of the economic status of branch railroads. When there is no pretense of paying according to distance travelled, as is the case with American street railways, it is obvious that an extension or branch, if it does not pay directly, cannot pay through carrying passengers to a main line where they ride a long distance. The nickel pays for the entire ride, and the longer it is the more it costs the company. But there is another way in which extensions that are not profitable according to their showing as treated separately, may nevertheless pay indirectly. A city street-railway system is interested in the development of its business center. The development of the business center is dependent upon the growth of a tributary population, and this involves the development of outlying residence districts. The development of outlying residence districts depends upon the building of extensions. The business man who comes to town in the morning will perhaps spend two nickels for short rides in the business section. And his wife shopping in the afternoon may spend two more. The only way such profitable business in the center of the town can be made to grow is by increasing the residence population tributary to the business center. To do this, cheap transit must be provided. Of course there are limits beyond which the street-railway system cannot afford to extend its lines for a nickel fare. But those limits are always something less than what they would be if an extension were always required directly to pay for itself. Not only will such an extension develop business which will afford more and more nickels as the neighboring population grows, but some of the increase of the business center traffic of the old lines may properly be attributed to it. This contribution, however, is general or common to whatever lines serve the latter traffic rather than confined to those controlled by the company building the extension. But the American city is in general served by a single inclusive system, which thus gets the full benefit of extensions and outlying lines.

It follows from the above that it is *not* necessary that every line of a street-railway system should pay for itself separately and directly and immediately. In every business large outlays are made with no expectation of immediate and direct return. Outlying lines of street railways in particular come under this principle. It is a very difficult practical problem to determine just how much an extension may economically be allowed to fall short of paying for itself. But in general a street railway should consider all the possibilities beforehand and take the consequences of its judgment. Because of the vested interests impaired by the advancement of the rate of fare on any suburban line, the general principle of a flat rate should not be encroached upon because of small losses on outlying lines incurred by a company having a network of lines extending through an entire city.

If there is any sort of traffic which on grounds of public policy should be allowed to retain the customary five-cent rate to the end, it is just this traffic between home and work. The "fat" profits should not be taken here. It is even a debatable question whether a municipality should not, if necessary, subsidize traffic between healthful suburbs and the business center.

III. Certain Applications of Differentiation in Street-railway Practice

There are two points of view from which a particular rate should be judged, the one that of the railroad as a business enterprise, the other that of the travelling public. Each rate question raised should be adequately studied on its individual merits from each of these points of view, but always with due regard to the fact that the rate under consideration will be part of a system of rates more or less differential in its nature.

The most important question at issue between the street railways and the public is as to the limit of distance which a passenger may expect to be carried from the center of the city for five cents. It is a public interest and should be a fundamental point of public policy to make the five cents carry the passenger as far as possible. But in many instances the street railways have done all the public should require of them in this direction, partly because they have wished to exclude competitors from the exercise of franchises that they have expected to become valuable. The present task is one of equalization and adjustment of the limit of carriage for a single fare, and of bringing it up to a reasonable standard in certain instances, rather than of generally extending it.

Whether that standard is 10 miles or something short of it we shall not attempt to say. It certainly is more than five. A mile for a cent is, in the opinion of many practical street-railway men, about the limit of the average ride for street-railway service. But the limit of distance of transportation from the business center is a question of the maximum, not of the average. Tho the length of ride on some extensions of surface routes appears to be unduly great, even after allowing these long routes some benefit of differentiation, yet if such lines are a part of a comprehensive system, that fact should be taken into account. The showing of the extension separately considered is not conclusive as to whether the five-cent rate is reasonable for it or not. We have above seen how the principle according to which a loss on a branch road may be no loss is, to a degree, also applicable to street-railway systems. The differential principle may, from this viewpoint, be applied with great force to favoring long riding into the suburbs. So far as increased short riding at the business center is a direct consequence of carrying more people to that center, it is not even necessary that the prime cost of the latter carriage shall be less than five cents, for it contributes largely, tho indirectly, to the profit from the short rides at the business center.

Even if the street-surface railways have sometimes over-reached themselves in the matter of extensions, it is not entirely clear that the public should be expected to pay the cost through an increased fare on such lines. The natural conditions of surface street-railway service protect such enterprises from any extreme development of long-haul business. The time consumed makes the street-surface road the practicable means of transportation for only a limited distance from the business center. The outlying lines of surface railways in the very large cities will, in the long run, be used chiefly as feeders for more rapid means of transit. Long rides on such surface lines to the business center will then be exceptional, and will probably occur at such hours as would make their prime cost less than a nickel — else the rush-hour traffic is not true to its name and does not care for speed. Hardly more than the maintenance of the *status quo* is necessary to give due consideration to all interests as regards these long or outlying lines.

Those who speak for the railways are prone to make too much of extensions of line as an indication of increase in the average length of ride. Such extensions are doubtless made in response to a growth of population, which also means that the distance between residence and business centers is becoming increasingly great. But tho some are now riding longer distances between home and work, others who walked before are just pushed beyond the walking limit, and many more are attending to errands within the business center by riding short distances instead of walking. As a city grows the number of rides always increases faster than population. With an increase in population of 30 per cent, rides may be expected to increase 60 per cent.[1] While the five-eighths of the passengers representing the old business are doubtless taking a longer ride, the three-eighths recently gained are quite as clearly relatively short-haul traffic. It is evident that the change does not certainly mean a significant increase in the average length of ride.

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[1] This is a conservative statement. Statistics bearing on the relation between urban population and street-railway traffic may be looked for in the 1910 report of the New York Public Service Commission, First District.

The accompanying increase in density of traffic also favors economical service; and the per capita contribution of the citizens to the support of the railway has increased faster than the extent of the latter's permanent plant.

It is the essence of any just conception of street-railway rates that the long-haul traffic between residence and business centers should not be considered by itself. If it is correct to compute separately the cost of this traffic and of inner-city traffic, it is even more certain that three cents is too much for the latter than that five cents is too little for much of the former. The fact is that the two are naturally and economically bound together. No rate policy for outlying districts should neglect this consideration.

Were there not the prospect of rapid-transit lines (with their low operating cost per seat-mile) taking over most of the long-distance home-to-work traffic, a radical rearrangement of fares on outlying surface lines might soon have to be considered. The system of differentiation cannot specially favor relatively increasing long-distance traffic. A kind of business that barely pays prime cost can be carried comfortably if it will remain only (say) 10 per cent of the total; but its growth to be 20 or 30 per cent might bring disaster. The steam roads are now feeling the effects of the disproportionate growth of favored long-haul traffic between large urban centers. Further extensions of street-surface lines in the largest cities, other than for rounding out an existing system, are not much to be expected under a uniform 5-cent rate. It is to the rapid-transit lines that must be entrusted the preservation of the single fare from increasingly distant residence portions to the business centers of the largest cities.

The relation of transfers to the rate of fare on street railways is a vital one. It has been so persistently the practice of railway men to count transfers as passengers and to figure an average fare on this basis, that it appears to some to be the natural means of increasing revenues to charge for transfers as if they constituted an additional service. For some purposes it is important to know the number of transfers. But the unit of service rendered by the railway company is the passenger trip and the unit of payment for that service is the single fare. The changing of cars is an accident of a passenger trip. The number of times it has to be done is determined chiefly by the routing of cars, or by the choice of a place of residence in relation to place of work that disregards this accident or incident of the daily journey. The necessity of changing cars would not be disregarded by the public if the transfer involved an additional payment. Under a system of pay transfers a company could, by an artificial routing of cars with a view to making the most of transfer receipts, considerably increase its revenues at a disproportionate cost to the public. Under such circumstances the routing of cars would have to become a matter for detailed public regulation. It is altogether better to allow the company to route cars according to its administrative convenience with regard to the direction of the movement of traffic. It will then try to reduce the need of transfers as much as may be, thereby combining economical operation with accommodation to the public. So long as the passenger trip, and not the passenger mile, is the unit of street-railway service, any reasonable trip that cannot be accomplished on a through car should be made possible by the use of a "free" transfer.

Because of the different competing economic interests involved, the case of a joint rate between separate companies or systems is ordinarily different from that of transfers between cars of a single system. Transfers have very properly been made the condition of consolidation, or a cost incident to it — if indeed their reasonable use in the long run may be said actually to involve any increase of cost. Real competition (as to service, the rate being fixed), however, is in itself so advantageous that it may be to some extent accepted in lieu of more transfer points. The reason for a difference of policy, however, as regards requiring transfers (at five cents per passenger trip) between the lines of a single company and a joint rate (at six to nine cents) between those of different ones, evidently contains its own qualification.

Joint rates may well be more than 5 cents, except where the corporations involved are not really independent and competing. Where they are competitors, the public gains from the opportunity afforded for comparing them as to grade of service and to some extent choosing between companies. Competition as regards the quality of service offered, the rate being fixed, has a value to the public which other sorts of competition between monopolistic enterprises do not have. But where the public cannot obtain the benefits of competition because of the control of nominally separate roads by a holding company, there is ground for requiring what is actually a transfer, tho legally a joint rate, wherever general or geographical conditions justify it.

It is the stock argument of those who oppose free transfers that they mean a declining rate of fare or an increasing length of ride, or even both. If the transfer be counted as a passenger, which is the way to arrive at a declining rate of fare, it is not at all likely that the length of ride for such a " passenger " has on the average even held its own. If the revenue passenger be taken as the unit, it may be that there has been an increase in the average length of ride (including in the single trip its continuation on another car). Of course one or the other of these arguments must lose its force when the two are combined. But granted that the ride is longer, and granted also that this has come about by reason of the general use of transfers, it still does not follow that the physical cost of carriage (the car mileage involved) has correspondingly increased, or increased at all. The long rides effected by transfer will be in directions or over routes not much frequented, else the company would through-route cars over them and avoid the necessity of transferring so much. The longest rides effected by means of transfers, it would be generally admitted, are those from outlying parts of town somewhat into the business center and then out again in a different direction. Such rides are taken at odd times and also in such a way that in part they are likely to be back load on cars otherwise almost empty. They are therefore rather profitable than otherwise to the company. This is doubtless rather generalized geography. Some restrictions of the transfer privilege are entirely just. The general allegation as to length of ride, however, of itself proves nothing. Chicago has recently taken steps to favor precisely such surface traffic from end to end of the city across the business center.

According to the idea of differentiation here presented, the differential character may find expression either in charging a varying rate for substantially similar services or in charging the same price for services differing in character. A highly important differentiation in the service of street railways is observable in the different conditions of carriage and treatment for rush-hour and non-rush passengers, the former being crowded and in large numbers compelled to stand, while the latter are given room and seats enough and to spare. Whether this is a reasonable differentiation is a question upon which the public seems to have adopted an opinion against the practice of the railways. The question is a particularly urgent one in the case of the New York subway. How far is the crowding there an over-crowding? The easy way to dispose of the matter is to assume that the number and proportion of standing passengers is the measure of over-crowding. But this assumes that it is feasible to maintain the same quality of service in the rush period and in the non-rush period, quality of service being defined with reference to the wishes of the passenger, namely, a seat at will for the length of his ride.

Does it mean the same thing, either from the viewpoint of the passenger or from that of the railroad, to furnish a seat in the rush period and to furnish one in the non-rush period? During the rush hour the average passenger trip is longer, in other words the passenger at that time wants more for his nickel. On the other hand, the providing of extra and otherwise little used equipment and employees for the peak-load means, for the railway company, a greater cost of the service per physical unit at this time. The demand for seats may be four or five times as great at the rush hour as it is in the middle of the day. It would seem that the only way to deal with this situation is to admit the necessity of a different standard of service for rush and non-rush periods, in other words, of differential treatment. If the rate of fare is to remain constant, it would seem necessary to allow a company to provide relatively fewer cars for its rush-hour than for its non-rush travel. This must be the case if the company is to receive the same revenue per car mile, since the longer ride means heavier loading, that is more passenger miles and more passengers in the car at the same time, the number of passengers (fares) per car mile remaining the same. It is possible that the railways should be allowed even a little more than this. Perhaps the revenue per car mile ought to be somewhat higher for the rush-hour service. True, it is not at all inconsistent with a correct theory of railway rates that the relatively invariable (" fixed " and other) charges apportioned to non-rush traffic should be great enough to allow rush-hour traffic to escape with comparatively little burden in addition to prime cost. But the staple business of a railway company, that which needs no encouragement and is on the contrary willing to put up with pretty bad service, is not the portion most likely to be favored. And the prime cost itself may be expected to be somewhat higher in the rush than in the non-rush hour. So it is clear that " a seat for every passenger " cannot be adopted offhand as the standard of service during the rush. Over-crowding may not be the same as crowding enough to compel some passengers to stand.

But for the uniformity of street-railway rates, which is not only generally established but well-suited to the economic and other requirements of the situation, the rush-hour passenger might justifiably be charged more than the non-rush passenger. *Vice versa* it is not unreasonable that he should, paying the same fare, expect to have to put up with a somewhat less comfortable ride at that time. There is certainly little economic ground for an especially reduced fare for this service, even tho its cheap performance be of the greatest importance.

The recognition of the presence of differentials in the customary five-cent fare helps towards an understanding of the most important questions of public policy in relation to street-railway rates. It is true that external differentiation of charges is seldom to be considered. The street-railway fare should in general be simple and single, and in America this means " flat " at the nickel. Transfers between car routes of the same company, having little to do with costs, should have as little to do with rates; they do not ordinarily constitute a peculiarity of the passenger trip that deserves special consideration. But the problem of a proper standard for rush-hour service should be regarded in its relation to differentiation. Crowding during the rush hour should be defined by reference to prime costs as well as to physical conditions. Most important of all, the limit of carriage to residence districts distant from the business center should be determined by a rather refined application of doctrines of prime cost and of secondary profits, and, as regards the surface lines, with reference to the self-limiting nature of the service. Rapid-transit lines are the natural means of preserving, for the largest cities, the " single fare " to their distant parts.

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